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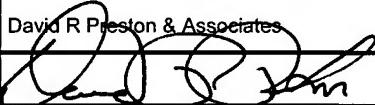
(to be used for all correspondence after initial filing)

	Application Number	10/705,615	
	Filing Date	11/10/2003	
	First Named Inventor	Xiaobo Wang	
	Art Unit	1744	
	Examiner Name	to be determined	
Total Number of Pages in This Submission	9	Attorney Docket Number	ACE-00101.P.1.2-US

ENCLOSURES (Check all that apply)

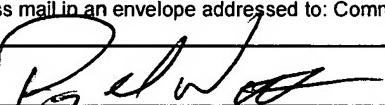
<input checked="" type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input type="checkbox"/> Amendment/Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input checked="" type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Reply to Missing Parts/ Incomplete Application <input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation <input type="checkbox"/> Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____ <input type="checkbox"/> Landscape Table on CD	<input type="checkbox"/> After Allowance Communication to TC <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Other Enclosure(s) (please Identify below):
Remarks 1. Listing of References on Form 1449; 2. 3 Volumes of cited references; and 3. Postcard		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	David R Preston & Associates		
Signature			
Printed name	David R Preston		
Date	March 1, 2005	Reg. No.	38,710

CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below:

Signature	
Typed or printed name	Raymond Wagenknecht
	Date 3/1/05

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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Effective on 12/08/2004.

Pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

FEE TRANSMITTAL For FY 2005

Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$)
0.00

Complete if Known

Application Number	10/705,615
Filing Date	11/10/2003
First Named Inventor	Xiaobo Wang
Examiner Name	to be determined
Art Unit	1744
Attorney Docket No.	ACE-00101.P.1.2-US

METHOD OF PAYMENT (check all that apply)

Check Credit Card Money Order None Other (please identify): _____

Deposit Account Deposit Account Number: 501321 Deposit Account Name: David R Preston

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

Charge fee(s) indicated below Charge fee(s) indicated below, except for the filing fee

Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.16 and 1.17 Credit any overpayments

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

FEE CALCULATION**1. BASIC FILING, SEARCH, AND EXAMINATION FEES**

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		
	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fees Paid (\$)
Utility	300	150	500	250	200	100	_____
Design	200	100	100	50	130	65	_____
Plant	200	100	300	150	160	80	_____
Reissue	300	150	500	250	600	300	_____
Provisional	200	100	0	0	0	0	_____

2. EXCESS CLAIM FEES**Fee Description**

Each claim over 20 (including Reissues)

Each independent claim over 3 (including Reissues)

Multiple dependent claims

Total Claims	Extra Claims	Fee (\$)	Fee Paid (\$)	Small Entity Fee (\$)	Fee (\$)
- 20 or HP =	x	=		50	25

HP = highest number of total claims paid for, if greater than 20.

Indep. Claims	Extra Claims	Fee (\$)	Fee Paid (\$)	Multiple Dependent Claims	Fee (\$)	Fee Paid (\$)
- 3 or HP =	x	=				

HP = highest number of independent claims paid for, if greater than 3.

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof	Fee (\$)	Fee Paid (\$)
- 100 =	/ 50 =	(round up to a whole number) x	=	

4. OTHER FEE(S)

Non-English Specification, \$130 fee (no small entity discount)

Other (e.g., late filing surcharge): _____

Fee Paid (\$) _____**SUBMITTED BY**

Signature		Registration No. (Attorney/Agent) 38,710	Telephone 858-724-0375
Name (Print/Type)	David R Preston		

This collection of information is required by 37 CFR 1.136. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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Patent
Docket Number: ACE-00101.P.1.2-US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:)
Wang et al.)
Application No.: 10/705,615)
Filed: November 11, 2003)
For: IMPEDANCE BASED)
APPARATUSES AND METHODS)
FOR ANALYZING CELLS AND)
PARTICLES)

Examiner: To Be Determined

Art Unit: 1744

Commissioner for Patents
Alexandria, VA 22313

INFORMATION DISCLOSURE STATEMENT

Sir:

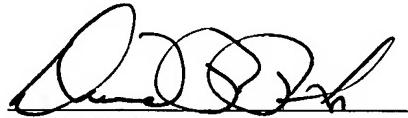
This Information Disclosure Statement is being filed before the mailing of a First Office Action on the merits under 37 C.F.R. § 1.97(a)(3). Accordingly, no fee under 37 C.F.R. § 1.17(p) is deemed necessary.

Applicants respectfully submit herewith a listing of references on the attached Form 1449 and three (3) volumes of cited references.

Please apply any charges not covered, or any credits, to Deposit Account number 501321 in the name of David R. Preston & Associates, having Customer Number 24232.

Respectfully submitted,

Date: March 1, 2005



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**INFORMATION DISCLOSURE
STATEMENT
BY APPLICANT**

(Use several sheets if necessary)

Docket Number:
ACE-00101.P.1.2-US

Application Number:
10/705,615

Applicant:
Xiaobo Wang

Filing Date:
November 10, 2003

Group Art Unit:
1744

U. S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE IF APPROPRIATE
	P1	2002/0032531	03/2002	Mansky et al			
	P2	2002/0076690	06/2002	Miles et al			
	P3	2002/0086280	07/2002	Lynes et al			
	P4	2002/0110847	08/2002	Baumann et al			
	P5	2002/0150886	10/2002	Miles et al			
	P6	2,656,508	10/1953	Coulter			
	P7	3,259,842	07/1966	Coulter et al			
	P8	3,743,581	07/1973	Cady et al			
	P9	3,890,201	06/1975	Cady			
	P10	4,072,578	02/1978	Cady et al			
	P11	4,225,410	09/1980	Pace			
	P12	4,686,190	08/1987	Cramer et al			
	P13	4,920,047	04/1990	Giaeever et al			
	P14	5,134,070	07/1992	Casnig			
	P15	5,187,096	02/1993	Giaeever et al			
	P16	5,218,312	06/1993	Moro			
	P17	5,278,048	01/1994	Parce et al			
	P18	5,284,753	02/1994	Goodwin			

Examiner Signature		Date Considered	
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U. S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE IF APPROPRIATE
	P19	5,563,067	10/1996	Sugihara et al			
	P20	5,626,734	05/1997	Docoslis et al			
	P21	5,643,742	07/1997	Malin et al			
	P22	5,801,055	09/1998	Henderson			
	P23	5,810,725	10/1998	Sugihara et al			
	P24	5,851,489	12/1998	Wolf et al			
	P25	5,981,268	11/1999	Kovacs et al			
	P26	6,051,422	04/2000	Kovacs et al			
	P27	6,132,683	10/2000	Sugihara et al			
	P28	6,169,394	01/2001	Frazier et al			
	P29	6,232,062	05/2001	Kayyem et al			
	P30	6,235,520	05/2001	Malin et al			
	P31	6,280,586	08/2001	Wolf et al			
	P32	6,288,527	09/2001	Sugihara et al			
	P33	6,368,851	04/2002	Baumann et al			
	P34	6,376,233	04/2002	Wolf et al			
	P35	6,448,030	09/2002	Rust et al			
	P36	6,448,794	09/2002	Cheng et al			
	P37	6,472,144	10/2002	Malin et al			
	P38						

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FOREIGN PATENT DOCUMENTS								
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	Translation	
							YES	NO
	F1	96/01836	01/1996	PCT				
	F2	99/66329	12/1999	PCT				
	F3	00/71669	11/2000	PCT				
	F4	01/038873	05/2001	PCT				
	F5	02/42766	05/2002	PCT				
	F6							

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)		
EXAMINER INITIALS		CITATION
	D1	Aravanis et al. A genetically engineered cell-based biosensor for functional classification of agents. Biosensors & Bioelectronics 16:571-577 (2001)
	D2	Baumann et al. Microelectronic sensor system for microphysiological application on living cells. Sensors & Accuators B55:77-89 (1999)
	D3	Becker et al, Separation of human breast cancer cells from blood by differential dielectric affinity. Cell Biology. 92:960-964 (1995)
	D4	Berens et al, The role of extracellular matrix in human astrocytoma migration and proliferation studied in a microliter scale assay. Clin. Exp. Metastasis 12:405-415 (1994)
	D5	Bergveld, A critical evaluation of direct electrical protein detection methods, Biosensors& Bioelectronics. 6:55-72 (1991)
	D6	Burns et al, Neutrophil Transendothelial Migration Is Independent of Tight Junctions and Occurs Preferentially at Tricellular Corners. Journal of Immunology 2893-2903 (1997)

Examiner Signature		Date Considered	
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OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)		
EXAMINER INITIALS		CITATION
	D7	Duan et al, Separation-Free Sandwich Enzyme Immunoassays Using Microporous Gold Electrodes and Self-Assembled Monolayer/Immobilized Capture Antibodies, Anal. Chem. 66:1369-1377 (1994)
	D8	Connolly et al., An extracellular microelectrode array for monitoring electrogenic cells in culture Biosensors & Bioelectronics 5: 223-234 (1990)
	D9	Ehret et al, Monitoring of cellular behaviour by impedance measurements on interdigitated electrode structures. Biosensors and Bioelectronics 12(1):29-41 (1997)
	D10	Ehret et al, On-line control of cellular adhesion with impedance measurements using interdigitated electrode structures, Medical & Biological Engineering and Computing 36:365-370
	D11	Falk et al, A 48-well Micro Chemotaxis Assembly for Rapid and Accurate Measurement of Leukocyte Migration. J Immunol. Meth. 33:239-247 (1980)
	D12	Fuhr et al, Positioning and Manipulation of Cells and Microparticles Using Miniaturized Electric Field Traps and Travelling Waves. Sensors and Materials 7(2):131-146 (1995)
	D13	Gaever et al, Monitoring fibroblast behavior in tissue culture with an applied electric field. Proc. Natl. Acad. Sci 81:3761-3764 (1984)
	D14	Gaever et al, Micromotion of mammalian cells measured electrically. Proc. Natl. Acad. USA 88: 7896-7900 (1991)
	D15	Hadjout et al., Automated Real-Time Measurement of Chemotactic Cell Motility BioTechniques 31: 1130-1138 (2001)
	D16	Henning et al, Approach to a multiparametric sensor-chip-based tumor chemosensitivity assay, Anti-Cancer Drugs 12:21-32 (2001)
	D17	Hidalgo et al, Characterization of the Human Colon Carcinoma Cell Line (Caco-2) as a Model System for Intestinal Epithelial Permeability. Gastroenterology 96:736-749 (1989)
	D18	Huang et al., Dielectrophoretic Cell Separation and Gene Expression Profiling on Microelectronic Chip Arrays. Anal. Chem. 74:3362-3371 (2002)

Examiner Signature		Date Considered	
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OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)		
EXAMINER INITIALS	CITATION	
	D19	Keese et al, Real-time impedance assay to follow the invasive activities of metastatic cells in culture. Biotechniques 33:842-850 (2002)
	D20	Kleinmann et al, Basement Membrane Complexes with Biological Activity. Biochemistry. 26:312-318 (1986)
	D21	Kowolenko et al., Measurement of macrophage adherence and spreading with weak electric fields. Journal of Immunological Methods 127: 71-77 (1990)
	D22	Larsen et al, Somatic Cell Counting with Silicon Apertures. Micro Total Analysis Systems 103-106 (2000)
	D23	Lo et al, Monitoring motion of confluent cells in tissue culture, Experimental Cell Research 204:102-109 (1993)
	D24	Lo et al., pH Changes in pulsed CO ₂ incubators cause periodic changes in cell morphology Experimental Cell Research 213: 391-397 (1994)
	D25	Lo et al., Impedance Analysis of MDCK cells measured by electric cell-substrate impedance sensing Biophysical Journal 69: 2800-2807 (1995)
	D26	Luong, et al., Monitoring Motility, Spreading, and Mortality of Adherent Insect Cells Using an Impedance Sensor. Analytical Chemistry 73: 1844-1848 (2001)
	D27	Mitra et al, Electric measurements can be used to monitor the attachment and spreading of cells in tissue culture. Biotechniques 11(4):504-510 (1991)
	D28	Miyata et al, New Wound-Healing Model Using Cultured Corneal Endothelial Cells. Jpn. J. Ophthalmol. 34:257-266 (1990).
	D29	Neher, Molecular biology meets microelectronics Nature Biotechnology 19: 114 (2001)
	D30	Nerurkar et al, The Use of Surfactants to Enhance the Permeability of Peptides Through Caco-2 Cells by Inhibition of an Apically Polarized Efflux System. Pharmaceutical Research 13(4):528-534
	D31	Ong et al, Remote Query Resonant-Circuit Sensors For Monitoring of Bacterial Growth: Application to Food Quality Control. Sensors 2:219-222 (2002)

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OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)		
EXAMINER INITIALS		CITATION
	D32	Pancrazio et al, Portable cell-based biosensor system for toxin detection. Sensors and Actuators B 53:179-185 (1998)
	D33	Patolsky et al, Detection of single-base DNA mutations by enzyme-amplified electronic transduction. Nature Biotechnology 19:253-257 (2001)
	D34	Pethig et al, Positive and negative dielectrophoretic collection of colloidal particles using interdigitated castellated microelectrodes. Appl. Phys. 24:881-888 (1992)
	D35	Richards et al, A Modified Microchamber Method For Chemotaxis and Chemokinesis. Immunological Communications 13(1):49-62 (1984)
	D36	Rishpon et al, An amperometric enzyme-channeling immunosensor, Biosensors & Bioelectronics, 12(3):195-204 (1997)
	D37	Simpson et al., Whole-cell biocomputing Trends in Biotechnology 19: 317-323 (2001)
	D38	Sohn et al, Capacitance cytometry: Measuring biological cells one by one. Proc. Nat. Acad. Sci. 97(20)10687-10690 (2000)
	D39	Stenger et al., Detection of physiologically active compounds using cell-based biosensors. Trends in Biotechnology 19: 304-309 (2001)
	D40	Svetlicic et al., Charge displacement by adhesion and spreading of a cell Bioelectrochemistry 53: 79-86 (2000)
	D41	Tiruppathi et al, Electrical method for detection of endothelial cell shape change in time: assessment of endothelial barrier function. Proc Natl Acad Sci USA 89:7919-7923 (1992)
	D42	Wang et al, A theoretical method of electrical field analysis for dielectrophoretic electrode arrays using Green's theorem. Appl. Phys. 1649-1660 (1996)
	D43	Wang et al, Selective dielectrophoretic confinement of bioparticles in potential energy wells. Appl. Phys. 26:1278-1285 (1993)
	D44	Wang et al, Cell Separation by Dielectrophoretic Field-flow-fractionation. Anal. Chem. 72:832-839 (2000)

Examiner Signature		Date Considered	
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OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)		
EXAMINER INITIALS		CITATION
	D45	Wang et al, Dielectrophoretic Manipulation of Cells with Spiral Electrodes. Biophysical Journal 72:1887-1899 (1997)
	D46	Wang et al, Separation of Polystyrene Microbeads Using Dielectrophoretic/Gravitational Field-Flow-Fractionation. Biophysical Journal 74:2689-2701 (1998)
	D47	Wang et al., Electronic Manipulation of Cells on Microchip-Based Devices. In Biochip Technology (eds.) Harwood Academic Publishers, PA U.S.A. 135-159
	D48	Warburg, Ueber die Polarisationskapacitat des Platins. Ann. Phy. 6:125-135 (1901)
	D49	Wegener et al, Electric cell-substrate impedance sensing system (ECIS) as a noninvasive means to monitor the kinetics of cell spreading to artificial surfaces, Experimental Cell Research, 259:158-166 (2000)
	D50	Wolf et al, Monitoring of cellular signalling and metabolism with modular sensor-technique: The PhysioControl0Microsystem (PCM). Biosensors & Bioelectronics 13:501-509 (1998)
	D51	Xiao et al, An in-depth Analysis of Electric Cell-Substrate Impedance Sensing To Study the Attachment and Spreading of Mammalian Cells, Anal. Chem 74:1333-1339 (2002)
	D52	Yang et al, Cell Separation on Microfabricated Electrodes Using Dielectrophoretic/Gravitational Field-Flow Fractionation. Anal. Chem. 71:911-918 (1999)
	D53	http://www.neuroprobe.com/protocol/pt_96a.html
	D54	http://www.bdbiosciences.com/discovery_labware/Products/inserts/BD_FalconHTS_fluoroblok_inserts/individual_fluoroblok_inserts/index.html
	D55	http://www.tecan.com/migration_intro1.pdf
	D56	New Products page. Science 298:2409 (2002)
	D57	Abstract: Real-Time Impedance Assay to Follow the Invasive Activities of Metastatic Cells in Culture. Biotechniques 33: 842 (2002)
	D58	http://www.biophysics.com/pages/front.html
	D59	

Examiner Signature		Date Considered	
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